AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-18 (cancelled).

19 (currently amended). A method of controlling an optical crosspoint switch which comprises intersecting input and output waveguides forming an intersection, a first upper active waveguide portion which is arranged adjacent to the input waveguide and which extends at least partially along the input waveguide to the intersection, a second upper active waveguide portion which is arranged adjacent to the output waveguide and which extends at least partially along the output waveguide from the intersection, and a corner mirror located at the intersection for coupling light signals from the first upper active waveguide portion to the second upper active waveguide portion wherein both refractive index and optical gain/loss of each active waveguide portion are changed by application of an electrical signal, the method comprising the steps of:

in an OFF state of the switch, using an electrical signal varying the refractive index profile of the first and second upper active waveguide portion in order to prevent light transfer from occurring between the first and second upper active waveguide portion and the input and output waveguides respectively; and

in the OFF state of the switch, using ~~an~~ the electrical signal varying the optical gain/loss~~loss/gain~~ characteristics of first and second upper active waveguide portions, thereby enhancing the prevention of light transfer between the first and second upper

active waveguide portions and the input and output waveguides respectively.

20 (currently amended). A method of controlling an optical crosspoint switch which comprises intersecting input and output active waveguides forming an intersection, a first upper active waveguide portion which is arranged adjacent to the input waveguide and which extends at least partially along the input waveguide to the intersection, a second upper active waveguide portion which is arranged adjacent to the output waveguide and which extends at least partially along the output waveguide from the intersection, and a corner mirror located at the intersection for coupling light signals from the first upper active waveguide portion to the second upper active waveguide portion wherein both refractive index and optical gain/loss of each active waveguide portion are changed by application of an electrical signal, the method comprising the steps of:

in an ON state of the switch, using an electrical signal varying the refractive index profile of the first and second upper active waveguide portions in order to enable light transfer to occur between the first and second upper active waveguide portions and the input and output waveguides respectively; and

in the ON state of the switch, using ~~an~~ the electrical signal, varying the optical gain/loss~~loss/gain~~ characteristics of the first and second upper active waveguide portions, thereby enhancing light transfer between the first and second upper active waveguides and the input and output waveguide portions respectively.

21 (currently amended). An optical crosspoint switch comprising:

intersecting input and output waveguides forming an intersection;

a first upper active waveguide portion arranged adjacent to the input waveguide and extending at least partially along the input waveguide to the intersection;

a second upper active waveguide portion arranged adjacent to the output waveguide and extending at least partially along the output waveguide from the intersection; and

a corner mirror located at the intersection for coupling light signals from the first upper active waveguide portion into the second upper active waveguide portion wherein both refractive index and optical gain/loss of each active waveguide portion are changed by application of an electrical signal, said ~~input and output waveguides or the~~ first and second upper active waveguide portions being made of a material having characteristics such that application of an electrical signal thereto causes variation of the optical gain/loss~~loss/gain~~ characteristics and refractive index profile thereof.

22 (currently amended). A switch as claimed in claim 21, wherein increases in the electrical signal cause increases in loss ~~of the input and output waveguides or~~ of the first and second upper active waveguides.

23 (currently amended). A switch as claimed in claim 21, wherein increases in the electrical signal cause increases in gain ~~of the input and output waveguides or~~ of the first and second upper active waveguides.

24 (previously presented). A switch as claimed in claim 21, wherein the input and

output waveguides intersect at an angle of substantially 90 degrees.

25 (currently amended). A switch claimed in claim 21, wherein the first and second upper active waveguides are of the same width as the input and output waveguides respectively.

26 (currently amended). A switch as claimed in claim 21, wherein the first and second upper active waveguides are not of the same thickness as the input and output waveguides respectively.

27 (currently amended). A switch structure as claimed in claim 21, wherein the first and second upper active waveguides are of the same thickness as the input and output waveguides respectively.

28 (previously presented). A switch as claimed in claim 21, wherein the axis of the first and second upper waveguides are centered above the axis of the input and output waveguides respectively.

29 (currently amended). A switch as claimed in claim 21, wherein the axis of the first and second upper active waveguides are not centered above the axis of the input and output waveguides respectively.

30 (currently amended). A switch as claimed in claim 21, wherein the first and

second upper active waveguides are not of constant width and thickness.

31 (previously presented). A switch as claimed in claim 21, wherein the input and output waveguides are not of constant width and thickness.

32 (previously presented). A switch as claimed in claim 21, formed on a substrate material which is substantially planar.

33 (currently amended). A switch as claimed in claim 21, wherein the upper~~input and output~~ waveguides are terminated by end facets that are not perpendicular to the active waveguide axis.

34 (original). An array of switches each switch being as claimed in claim 21.

35 (previously presented). An array of switches as claimed in claim 34, wherein the input and output waveguides have tapered ends to enhance coupling between the array and an optical fiber.

36 (new). A switch as claimed in claim 21, wherein the input and output waveguides are passive waveguides.